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NAS WHITING FIELD
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FINAL SAMPLING AND ANALYSIS PLAN FOR SITE 16 NAS WHITING FIELD FL

4/6/2001

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CH2MHILL
Constructors, Inc.

April 6, 2001

Ms. Linda Martin (Code 1859)
Southern Division, Naval Facilities Engineering Command
P.O. Box 190010
North Charleston, SC 29419-9010

RE: Contract No. N62467-98-D-0095,
Contract Task Order 0011 – Naval Air Station (NAS) Whiting Field – Milton, Florida
Final Soil Sampling and Analysis Plan, Site 16 – Open Disposal and Burning Area

Dear Ms. Martin:

CH2M HILL Constructors (CCI) is pleased to provide one (1) copy of the Final Soil Sampling and Analysis Plan, Site 16 – Open Disposal and Burning Area, NAS Whiting Field, Revision 02. This sampling plan incorporates the changes discussed at the March 20, 2001 Partnering Team meeting, thus deleting arsenic sampling from the plan. The plan also added four additional grid samples in a 10-foot radius around the one reamining original sample to be investigated. This will provide tighter delineation (per Site 15) should remediation be deemed necessary.

Please contact me at 850.939.8300, ext. 17 if you have any questions or comments regarding this material.

Sincerely,

CH2M HILL

Amy Twitty, P.G.
Project Manager

c: Jimmy Jones, SOUTHDIV (w/o)
Mark Shull/NTR NAS Pensacola
Craig Benedikt/EPA
Jim Cason/FDEP
Terry Hansen/TtNUS (electronic only)
Gerry Walker/TtNUS (electronic only)
Jim Holland/NASWF
Phillip Ottinger/TtNUS
CCI Project File No. 151168

Soil Sampling and Analysis Plan

Revision No. 02

Site 16 - Open Disposal and Burning Area

Naval Air Station Whiting Field

Milton, Florida

Contract No. N62467-98-D-0995
Contract Task Order No. 0011

April 2001

PREPARED FOR

Department of the Navy, Southern Division
Naval Facilities Engineering Command
2155 Eagle Drive
North Charleston, South Carolina 29406

Soil Sampling and Analysis Plan
Site 16 – Open Disposal and Burning Area
NAS Whiting Field, Milton, Florida

Background

Site 16 is located in the southwest area of Naval Air Station Whiting Field (NASWF), directly west of the South Air Field (Figure 1). The site is rectangular in shape, currently forested with planted pine trees, and covers approximately twelve acres. The site was used as the primary waste disposal area for NASWF from 1943 to 1965. Two large pits were located on this site into which general refuse plus waste from aircraft operations and maintenance were disposed of at an estimated annual disposal volume of 3,000 and 4,000 tons. To reduce the volume, diesel fuel was used to ignite the waste, which included paints, solvents, waste oil, hydraulic fluid, and wastewater from paint stripping and other operations. Dielectric fluids containing polychlorinated biphenyl's (PCBs) may also have been disposed of at this site. A small, shallow ephemeral wetland (less than 0.1 acre and less than 2 feet deep) is located along the site's eastern boundary. The land surface slopes to the west at an average grade of five- percent (Harding Lawson Associates 2000).

A surface soil assessment was conducted during the Remedial Investigation (RI) of Site 16. During Phase IIA, three surface soil samples (16-SL-01 through 16-SL-03) were collected and during Phase IIB, 17 surface soil samples were collected (16SO0101 through 16SO1701). Surface soil samples were collected from 0 to 12 inches below land surface (bls). Figure 2 presents the RI sample locations.

Phase IIB surface soil samples exhibited concentrations of various Polynuclear Aromatic Hydrocarbons (PAHs) and other inorganics above USEPA Region III RBCs and/or Florida residential SCTLs including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, antimony, arsenic, barium, copper, iron, lead, and vandium. One pesticide, dieldrin, was above the residential and leachability standards but below the industrial cleanup value. Of these, only two PAHs, benzo(a)pyrene and dibenzo(a,h)anthracene were found at concentrations above industrial standards (Harding Lawson Associates 2000). Soil sample analyses results from the RI are depicted in Table 1.

TABLE 1

Soil Sampling Analytical Results

Site 16, Whiting Field NAS

Compound	Regulatory Guidelines		Soil Sample Locations
	USEPA Region III RBCs* Residential/ Industrial	SCTL for Florida Residential/ Industrial/ Leachability	16SO06
PAHs (µg/kg)			
Benzo(a)anthracene	870/7800	1,400/5,000/3,200	2,300
Benzo(a)pyrene	87/780	100/500/8,000	**3,100**
Benzo(b)fluoranthene	870/7,800	1,400/4,800/10,000	3,600
Dibenzo(a,h)anthracene	87/780	100/500/30,000	**700**
Indeno(1,2,3-cd)pyrene	870/7,800	1,500/5,300/28,000	1,900
Pesticide (µg/kg)			
Dieldrin	40/360	70/300/4	130

Notes:

Soil sample concentrations exceeding industrial guidelines are in **BOLD**.
USEPA = United States Environmental Protection Agency
RBC = Risk Based Concentration
PAH = Polynucelar Aromatic Hydrocarbons
* Results will be compared to Region IX PRGs if Florida SCTLs are not listed.
µg/kg = microgram per kilogram
-- = analyte not detected

Summary of Work

This work will consist of surface soil sampling at Site 16 to delineate the extent of the contaminants of concern (COCs), which include PAH constituents in surface soil in the vicinity of RI samples 16SO06.

Health and Safety

There are health and safety hazards associated with work to be performed under this contract. Work is expected to be conducted in Level D protection, with provisions to upgrade to Level C protection as specified in the Basewide Health and Safety Plan.

Field Sampling Plan

Soil Investigation

A minimum of 20 surface soil samples will be collected in the vicinity of sample 16SO06, for the source delineation of the COCs. A 75 feet (ft) by 75 ft sampling grid will be set up around the approximate location of the original sample (as identified by the land surveyor).

The samples will be collected on 25-ft centers. Additionally, four samples will be collected in a 10-foot radius from the original sample. Initially, only the four samples immediately surrounding the original sample location will be analyzed for the COCs associated with that sample. Based on the analytical results of these initial samples, analysis of the remaining samples may be necessary to complete the delineation of COCs. Refer to Figure 3 for the grid layout for the surface soil sample location.

The samples will be collected from 0 to 1-foot bls using decontaminated stainless steel hand augers. Soil will be placed into stainless steel bowls, thoroughly mixed using stainless steel spoons, and placed in glass jars. Soil samples will be described using the Unified Soil Classification System and recorded in a bound logbook by CH2M HILL Constructors (CCI) personnel. All sampling will be conducted in accordance with CH2M HILL's Florida Department of Environmental Protection-approved Comprehensive Quality Assurance Plan (CompQAP) and the EPA, Region IV Environmental Investigation Standard Operating Procedures and Quality Assurance Manual (EISOPQAM, dated May 1999).

All samples will be shipped to a Navy-approved laboratory for analysis on 14-day turn around time. Samples will be analyzed for PAH constituents using EPA Method 8310. Level III Data Quality Objectives will be used for reporting purposes. Components of the soil sampling plan are shown in Table 2.

Reporting Requirements

The results of the soil sampling will be summarized in a brief letter report. Based on the results presented in the report, a final action (i.e., hot spot removal) will be determined for the site.

TABLE 2
Soil Sample Collection and Analysis
Site 16, Whiting Field NAS

RI Sample Location	Station IDs	Strata	EPA Method 8310
16SO06	16SO1801 – 16SO3801	Surface soil	√
Field Duplicates (5%)	16SO8201	Surface soil	√
MS/MSD (5%)	16SO8301	Surface soil	√
Rinsate Blanks (5%)	16SO8401	Surface soil	√
Estimated No. of samples to be collected:			19
Notes: MS/MSD = Matrix Spike/Matrix Spike Duplicate SO = surface soil			

Works Sited

CH2M HILL, Inc. *Basewide Health and Safety Plan, Whiting Field, Milton, Florida*. 1999.

CH2M HILL, Inc. *Comprehensive Quality Assurance Plan*. 1998.

EPA. *EPA Region IV Environmental Investigation Standard Operating Procedures and Quality Assurance Manual*. May 1999.

Harding Lawson Associates. *Remedial Investigation Report, Site 16, Open Disposal and Burning Area, Naval Air Station Whiting Field, Milton, Florida*. January 2000.

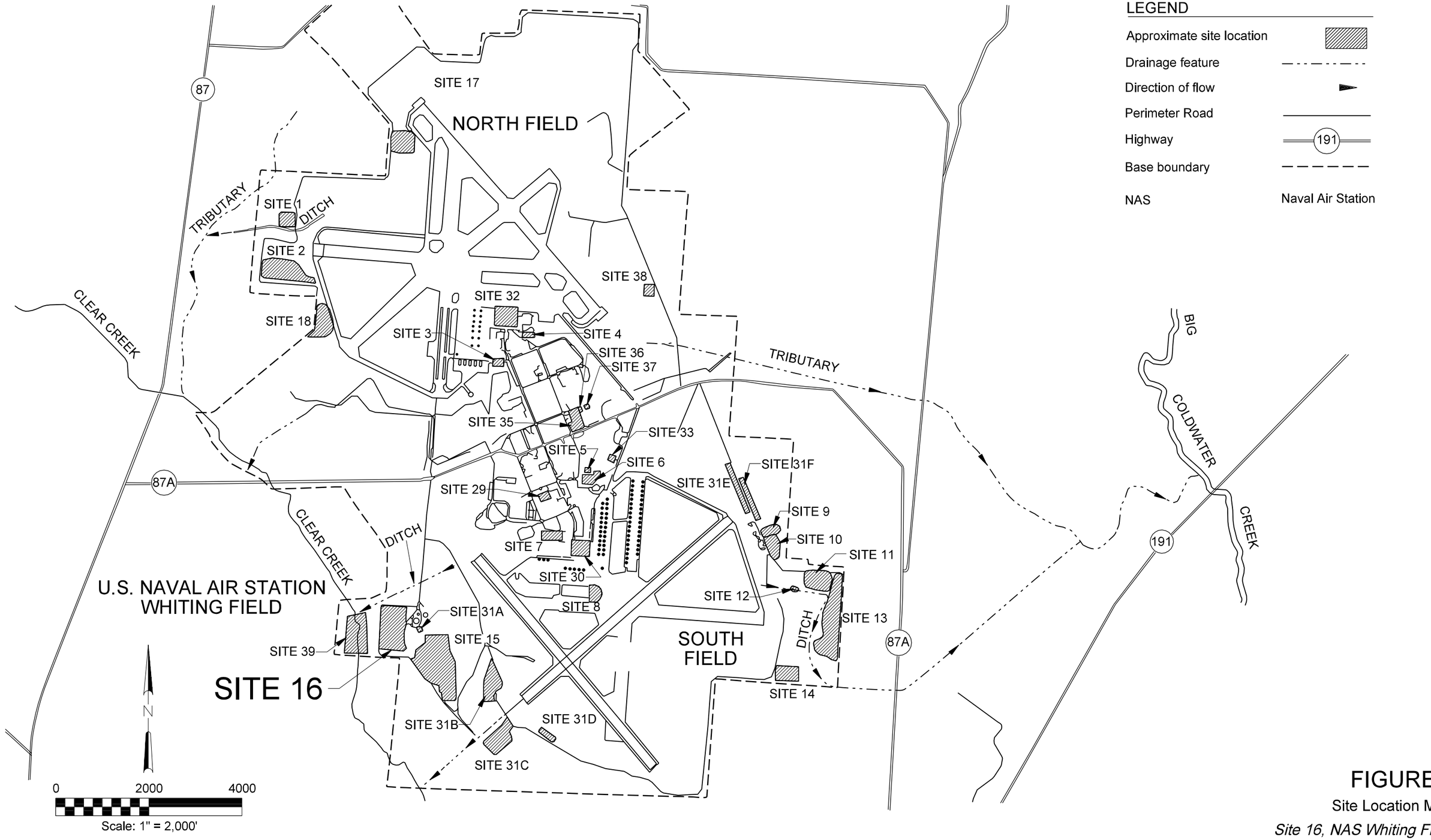
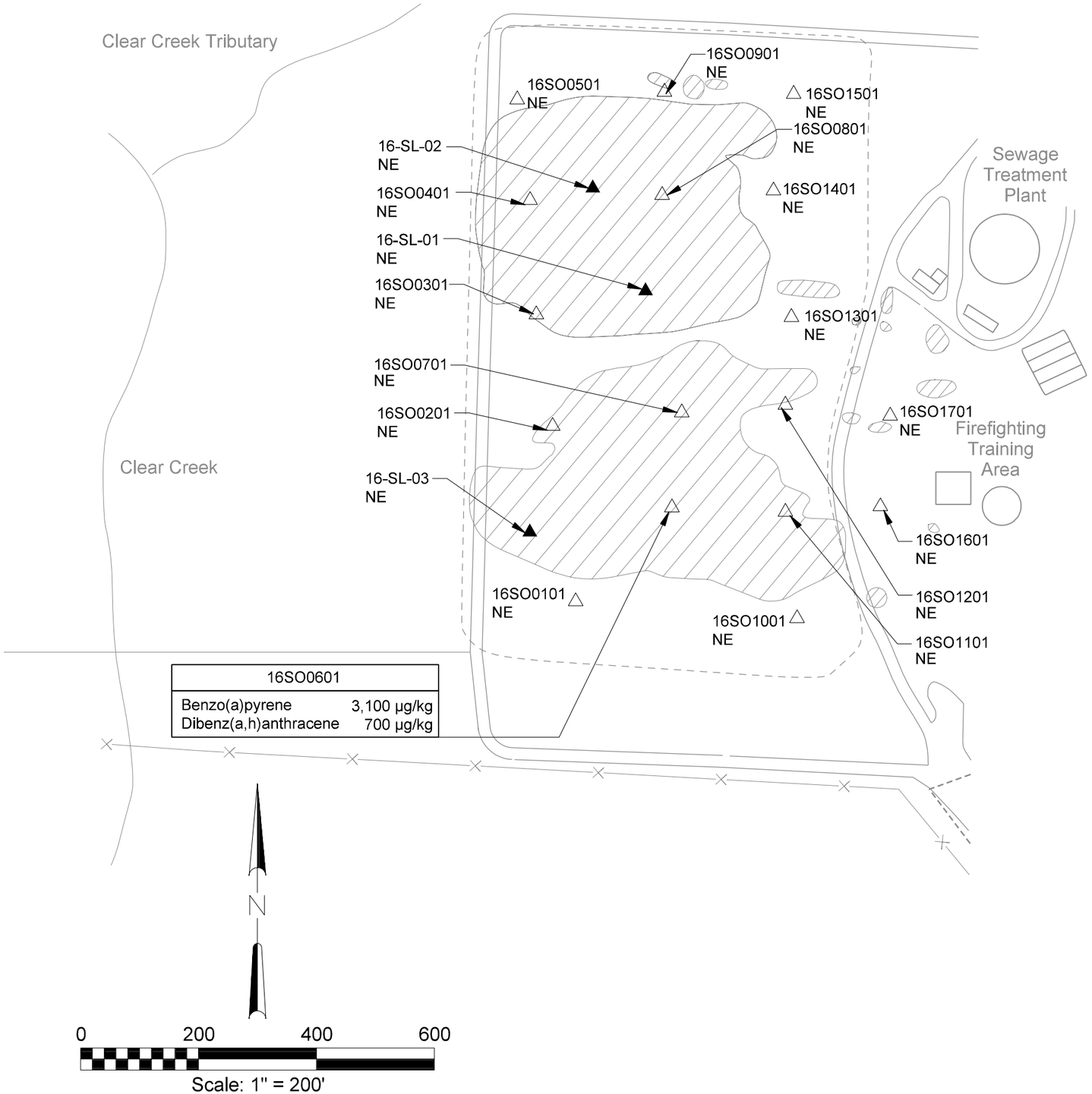


FIGURE 1
Site Location Map
Site 16, NAS Whiting Field



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Phase IIA surface soil sample and designation	▲16-SL-01
Phase IIB surface soil sample and designation	△16SO0101
Interpreted landfill areas	
Approximate site boundary	
Base boundary / fence	

Notes:

1. All soil samples collected from 0-1' below land surface (bls).
2. The applicable industrial soil criteria for Site 16 are :

	EPA RBC	FDEP SCTL
Benzo(a)pyrene (µg/kg)	780	500
Dibenz(a,h)anthranene (µg/kg)	780	500

3. RBC = Risk-Based Concentration
4. SCTL = Soil Cleanup Target Level
5. NE = No exceedance of applicable criteria

FIGURE 2

Phase IIA and Phase IIB Surface Soil Sample Locations and Industrial Soil Criteria Exceedances

Site 16, NAS Whiting Field

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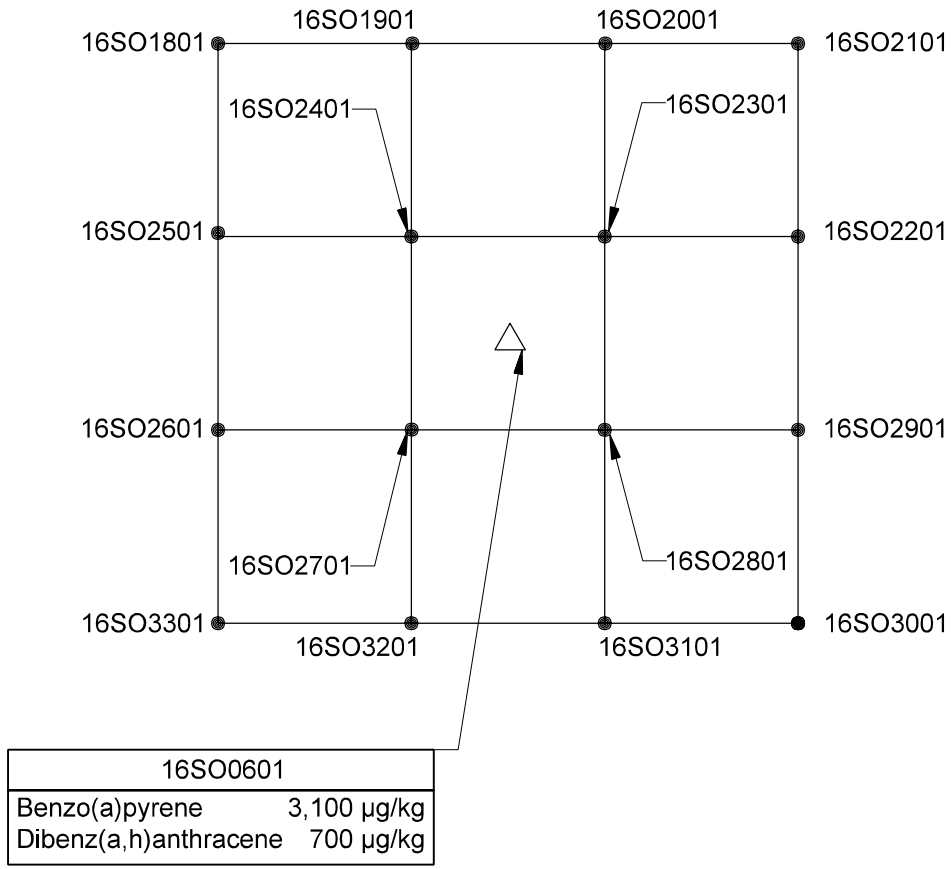
Phase IIB surface soil sample and designation — 16SO0601 △

Additional grid surface soil sample and designation — 16SO1801 ●

Notes:

1. EPA Region III Industrial Soil Risk-Based Concentration (RBC) for benzo(a)pyrene and dibenz(a,h)anthracene is 780 µg/kg.

2. FDEP Direct Exposure Industrial Soil Cleanup Target Level (SCTL) for benzo(a)pyrene and dibenz(a,h)anthracene is 500 µg/kg.



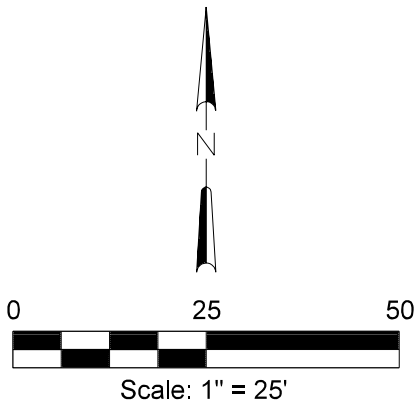


FIGURE 3

Grid Layout Surrounding Phase IIB Soil Sample 16SO0601

Site 16, NAS Whiting Field

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